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10/584,056	10/12/2007	Zoltan Facius	291334US8X PCT	4617

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EXAMINER	
BROOKS, JERRY L.	

ART UNIT	PAPER NUMBER
2878	

NOTIFICATION DATE	DELIVERY MODE
09/02/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/584,056	FACIUS ET AL.	
	Examiner	Art Unit	
	JERRY BROOKS	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07/30/2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-19 and 21-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-19 and 21-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13 – 19 and 21 - 26 are rejected under 35 U.S.C. 103(a) as being obvious over Janssen (US 2003/0223044) in view of O'conner (US 2004/0145703).

With respect to claim 13, Janssen discloses an image generation unit (fig.2), comprising: a light input section (the light entrance surface of 203, adjacent to the light source, see fig.2) configured to receive primary illumination light (211) from a first or light incidence direction (light moves toward projection lens 210);

an image generation element arrangement (see fig.2, 204) configured to produce an image by using the primary illumination light or a derivative of the primary illumination light (204 is an LCD configured to modulate the primary illumination light) and to thereby generate secondary illumination light (light emitted from the surface of LCD); and a light output section (the light exit surface of 203, adjacent to projection lens 210, see fig.2) configured to emit the secondary illumination light or a derivative of the secondary illumination light as tertiary illumination light representative for an image in a second or image emission direction (light is emitted from exit surface of prism 203

towards the projection lens 210 in a second emission direction),wherein the light input section (the light entrance surface of 203, adjacent to the light source, see fig.2) and the light output section (the light exit surface of 203, adjacent to projection lens 210, see fig.2) are arranged such that the first or light incidence direction and the second or image emission direction are collinear coincident with respect to each other (the light input section and the output section are arranged such that the first and second directions which are both toward the projection lens are collinear coincident), and the respective collinearly and coincidence properties of the first and second directions with respect to each other are realized by a single optical folding element only (the respective collinearly and coincidence properties of the first and second directions with respect to each other are realized by prism 203 only);

However Janssen does not disclose wherein the image generation element arrangement comprises an electronic color switching element configured to transmit at least one first spectral component of incident light and to avoid transmission of the complimentary spectral range of the at least one first spectral range of at least one first spectral component, and to controllably switch a wavelength of the at least one first spectral component.

O'conner discloses an image projection unit with a polarizing beam splitter (42) wherein the image generation element arrangement (see fig.3) comprises a color switching element (16 and supporting structure; also see discussion of electronic color switching element 44 in paragraph 0019) configured to controllably transmit at least one first spectral component of incident light (see paragraph 0022 wherein at least one

first spectral of at least one first component is transmitted (blue transmitted by the electronic color switch) and to avoid transmission of the complimentary spectral range of the at least one first spectral range of at least one first spectral component (color switch avoids the transmission of the complimentary spectral range by only transmitting Red and Blue to optical engine 13; thereby avoid the transmission of a complementary color associated with the mixture green and red or green and blue) and to controllably switch a wavelength of the at least one first spectral component (see fig.3 and 4 wherein the said color switch switches from the transmission of blue wavelength light to green wavelength light).

It would have been obvious to one of ordinary skill in the art to modify the image generation unit of Janssen with the electronic color switch and supporting structure of O'conner to improve the spectral purity of Janssen's device thereby improve color contrast.

With respect to claim 14, Janssen in view of O'conner discloses an image generation unit according to claim 13, Janssen further comprising a polarization selective beam splitting device (beam splitting prism in 203) provided as the single optical folding element and including a light input section (the light entrance surface of 203, see fig.2) serving as the light input section of the image generation unit or as a part thereof, and a light output section (the light exit surface of 203, see fig.2) serving as

the light output or light emission section of the image generation unit or as a part thereof.

With respect to claim 15, Janssen in view of O'conner discloses an image generation unit according to claim 14, Janssen further discloses wherein the polarization selective beam splitting device includes a beam splitting cube (203), a first pair of opposing surfaces(the light exit surface and light entrance surface of 203, see fig.2) serving as the light input section (the light entrance surface of 203, see fig.2) of the polarization selective beam splitting device and as the light output section (the light exit surface of 203, see fig.2) of the polarization selective beam splitting device.

With respect to claim 16, Janssen in view of O'conner discloses an image generation unit according to claim 14, Janssen discloses wherein the polarization selective beam splitting device comprises a polarization selective beam splitting interface configured to reflect light of a first polarization state and configured to transmit light of a second polarization state (transmits p-light and reflects s-light: see paragraph 0034 and 0035).

With respect to claim 17, Janssen in view of O'conner discloses an image generation unit according to claim 16, Janssen discloses wherein at least one of element or part image generation element arrangement (205) is positioned outside a path or passage defined by the first and second directions and the polarization selective

beam splitting device (203) or a polarization selective beam splitting interface of the polarization selective beam splitting device (the image generation element is positioned outside a path or passage by the first and second directions: see fig.2).

With respect to claim 18, Janssen in view of O'conner discloses an image generation unit according to claim 13, Janssen discloses wherein the image generation arrangement comprises a reflective imager panel element in a LCD-panel configured to controllably generate an image (last sentence of 0028).

With respect to claim 19, Janssen in view of O'conner discloses an image generation unit according to claim 13,Jassen further discloses wherein the image generation element arrangement comprises a mirror (208) configured to receive light reflected by a polarization selective beam splitting interface or a derivative thereof (light beam 212 is a derivative of the light reflected by the polarization device) and to reflect the received light (212: light 212 is rotated and then reflected back by 208) back, thereby changing its polarization state from p to s or from s to p, respectively (212 is changed from p to s).

With respect to claim 21, Janssen in view of O'conner discloses an image generation unit according to claim 14, Janssen is silent on wherein the image generation element further comprises a quarter wave retarder.

O'conner discloses wherein the color switching element which comprises a quarter wave retarder and a reflective electronic color switch (see paragraph 0022 wherein the color switch phase retards red and blue light be 45 degrees thereby disclosing a quarter wave retarder and wherein the green light is reflected thereby disclosing the electronic color switch as reflective and thereby discloses wherein the image generation element further comprises a quarter wave retarder).

It would have been obvious to one of ordinary skill in the art to modify the image generation unit of Janssen with the electronic color switch and supporting structure of O'conner to improve the spectral purity of Janssen's device thereby improve color contrast.

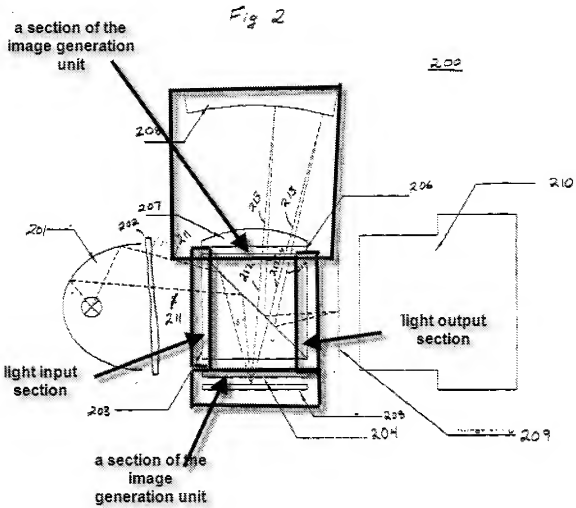
With respect to claim 22, Janssen in view of O'Conner discloses an image generation unit according to claim 21, Janssen discloses wherein the imager panel element and an reflective arrangement together (208 and supporting structure) are configured at or in a pair of opposing sections of the image generation unit and of the polarization selective beam splitting device (see fig.2 above), the opposing sections being different from the light input or light incidence section and the light output or light emission section (again see figure 2 above) of the image generation unit, and further the opposing sections are different from the light input section and the light output section of the polarization selective beam splitting device (again see figure 2 above

wherein the opposing sections are different from the light input section and the light output section of the polarization selective beam splitting device).

Janssen does not explicitly disclose the reflective arrangement with the electronic switchable color filter.

O'Conner discloses an image projection unit with a polarizing beam splitter (42) wherein a reflective arrangement (color switch and supporting structure) has a color switch (16 and supporting structure).

It would have been obvious to one of ordinary skill in the art to modify the reflective unit of Janssen with the electronic color switch and supporting structure of O'Conner to improve the spectral purity of Janssen's device thereby improve color contrast.



With respect to claim 23, Janssen in view of O'conner discloses an image generation unit according to claim 22, wherein the opposing sections of the image generation unit and of the polarization selective beam splitting device are perpendicular oriented with respect to the light input or light incidence section and the light output or light emission section of the image generation unit (see fig.2 above wherein the opposing sections of the image generation unit and of the polarization selective beam splitting device are oriented perpendicular to the light input or light incidence section and the light output or light emission section of the image generation unit) and are oriented perpendicular to

the light input section and the light output section of the polarization selective beam splitting device (see fig.2 wherein the opposing sections of the image generation unit and of the polarization selective beam splitting device are perpendicular oriented with respect to the light input section and the light output section of the polarization selective beam splitting device).

With respect to claim 24, Janssen discloses an image projection device (fig.2), comprising: an illumination unit (201) configured to generate primary illumination light, an image generation unit (204, 208, 206, 207, 205, 203 comprise the image generation unit) configured to receive the primary illumination light and to generate and emit an image; and a projection unit (210) configured to receive and project the image, a light input section (the light entrance surface of 203, adjacent to the light source, see fig.2) configured to receive primary illumination light (211) from a first or light incidence direction (light moves toward projection lens 210); an image generation element arrangement (see fig.2, 204) configured to produce an image by using the primary illumination light or a derivative of the primary illumination light (204 is an LCD configured to modulate the primary illumination light) and to thereby generate secondary illumination light (light emitted from the surface of LCD); a light output section (the light exit surface of 203, adjacent to projection lens 210, see fig.2) configured to emit the secondary illumination light or a derivative of the secondary illumination light as tertiary illumination light representative for an image in a second or image emission direction (light is emitted from exit surface of prism 203 towards the projection lens 210 in a

second emission direction),wherein the light input section (the light entrance surface of 203, adjacent to the light source, see fig.2) and the light output section (the light exit surface of 203, adjacent to projection lens 210, see fig.2) are arranged such that the first or light incidence direction and the second or image emission direction are collinear coincident with respect to each other (the light input section and the output section are arranged such that the first and second directions which are both toward the projection lens are collinear coincident), and the respective collinearly and coincidence properties of the first and second directions with respect to each other are realized by a single optical folding element only (the respective collinearly and coincidence properties of the first and second directions with respect to each other are realized by prism 203 only) ; Jansen does not explicitly disclose wherein the image generation element arrangement comprises an electronic switchable color filter that is configured to controllably transmit at least one first spectral component of incident light and to avoid transmission of the complimentary spectral range of the at least one first spectral range.

O'conner discloses an image projection unit with a polarizing beam splitter (42) wherein the image generation element arrangement (see fig.3) comprises a color switching element (16 and supporting structure; also see discussion of electronic color switching element 44 in paragraph 0019) configured to controllably transmit at least one first spectral component of incident light (see paragraph 0022 wherein at least one first spectral of at least one first component is transmitted (blue transmitted by the electronic color switch) and to avoid transmission of the complimentary spectral range of the at least one first spectral range of at least one first spectral component (color

switch avoids the transmission of the complimentary spectral range by only transmitting Red and Blue to optical engine 13; thereby avoid the transmission of a complementary color associated with the mixture green and red or green and blue) and to controllably switch a wavelength of the at least one first spectral component (see fig.3 and 4 wherein the said color switch switches from the transmission of blue wavelength light to green wavelength light).

It would have been obvious to one of ordinary skill in the art to modify the image generation unit of Janssen with the electronic switchable color filter and supporting structure of O'conner to improve the spectral purity of Janssen's device thereby improve color contrast.

With respect to claim 25, Janssen in view of O'conner discloses an image generation unit according to claim 13, Janssen does not disclose wherein the electronic switchable color filter is configured to generate different colors in a time sequential mode.

O'conner discloses wherein the electronic switchable color filter is configured to generate different colors in a time sequential mode (see paragraph 0019).

It would have been obvious to one of ordinary skill in the art to modify the reflective unit of Janssen with the electronic color switch and supporting structure of O'Conner to improve the spectral purity of Janssen's device thereby improve color contrast.

With respect to claim 26, Janssen discloses an image generation unit, comprising: a light input section (the light entrance surface of 203, adjacent to the light source, see fig.2) configured to receive primary illumination light (211) from a first or light incidence direction (light moves toward projection lens 210), and a light output section (the light exit surface of 203, adjacent to projection lens 210, see fig.2) configured to emit the secondary illumination light or a derivative of the secondary emission direction (light is emitted from exit surface of prism 203 towards the projection lens 210 in a second emission direction),wherein the light input section (the light entrance surface of 203, adjacent to the light source, see fig.2) and the light output section (the light exit surface of 203, adjacent to projection lens 210, see fig.2) are arranged such that the first or light incidence direction and the second or image emission direction are collinear coincident with respect to each other; Janssen does not disclose wherein the image generation unit comprises a reflective electronic color switch that is configured to reflect a first color so as to have turned polarization state and is further configured to reflect light having a color different from the first color in an unchanged polarization states, the reflective electronic color switch being configured to controllably switch a wavelength of the first color.

O'conner discloses wherein the image generation element arrangement comprises a reflective color switch (see 16 and supporting; also see paragraph 0019 wherein the operation of the color filter is disclosed) that is configured to reflect a first color so as to have turned polarization state (see blue light) and is further configured to reflect light having a color different from the first color in an unchanged polarization

states (see line 3 of 0022 wherein green light is said to be reflected) the reflective color switch being configured to controllably switch a wavelength of the first color (see fig.3 and 4 wherein the said color switch switches from the transmission of blue wavelength light to green wavelength light).

It would have been obvious to one of ordinary skill in the art to modify the reflective unit of Janssen with the electronic color switch and supporting structure of O'Conner to improve the spectral purity of Janssen's device thereby improve color contrast.

Response to Arguments

Applicant's arguments filed on 06/29/2010 have been fully considered but they are not persuasive. On page 9 of the Remarks, applicant argues that O'conner does not teach "avoiding the passing of the passing of the complementary spectrum of the one that is switch to pass .

Examiner respectfully disagrees. O'conner discloses in fig.3 a color switch which avoids the transmission of the complimentary spectral range by only transmitting Red and Blue to optical engine 13; thereby avoid the transmission of a complementary spectrum associated with the combination green and red or green and blue.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY BROOKS whose telephone number is (571)270-5711. The examiner can normally be reached on Monday-Friday, 9 a.m.- 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JERRY BROOKS/
Examiner, Art Unit 2878

/Que T. Le/
Primary Examiner, Art Unit 2878